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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/752,882	12/28/2000	Luke E. Girard	42390P10236	9419

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EXAMINER	
DANG, KHANH NMN	

ART UNIT	PAPER NUMBER
2111	11

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/752,882	GIRARD, LUKE E.	
	Examiner	Art Unit	
	Khanh Dang	2111	

-- The MAILING DATE of this communication appears on th cover sheet with the correspondence address --

P ri d f r Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disp sition of Claims

4)☒ Claim(s) *1-3,5,7,9-12,15,16,18-21 and 24-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3, 5, 7, 9-12, 15, 16, 18-21, and 24-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2, 3, 5, 9, 10, 11, 15, 18-21, and 24-26 are rejected under 35 U.S.C. 102(b) as being anticipated by Bealkowski et al. (cited in the previous Office Action).

With regard to claim 1, Bealkowski et al. (Bealkowski) discloses a personal computer system comprising a computing device comprising: a host processor (system processor in Bealkowski) coupled to a bus to execute a pre-operating system software program (BIOS program) and an operating system present software program (stored in mass storage device/disks 12, for example), a non-volatile memory (BIOS ROM) coupled to the host processor (system processor), the non-volatile memory (BIOS ROM) to store the pre-operating system software program; a disk memory (disk 12, for example) coupled to the bus, the disk memory to store the operating system present software program and an operating system; and a protected storage medium (a protectable partition on disk 12) coupled to the host processor (system processor), the protected storage medium (a protectable partition on disk 12) to enable secure exchange of a protected message between the pre-operating system software program and the operating system present software program.

With regard to claim 2, it is clear that both the pre-operating system software program and the operating system present software program can access to the protected storage medium through their respective interfaces (during read/write, for example).

With regard to claim 3, it is clear that the protected storage medium is a non-volatile re-writeable memory device.

With regard to claim 5, it is clear from Bealkowski, the protected message is exchanged during boot-up (system initialization in Bealkowski) of the computing device.

With regard to claim 9, it is clear that in Bealkowski, the protected storage medium is stored in the protected partition of mass storage device after initialization process.

With regard to claim 10, it is clear that in Bealkowski, the protected storage medium is retrieved from the protected partition of mass storage device by the pre-operating system software program during reboot (initialization) of the computing device.

With regard to claim 11, 15, 18-21, 24-26, it is clear that one using the device of Bealkowski would have performed the same steps set forth in claims 11, 15, 18-21, and 24-26.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-3, 5, 7, 9-11, 18-21, 25, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frank, Jr. et al. (Frank) in view Bealkowski et al. (cited in the previous Office Action).

With regard to claims 1 and 3, Frank, Jr. et al. discloses a computing device comprising: an operating system (microprocessor 330, 430 executes program code, including operating system code and application program code, and reads or writes data in conjunction with code execution); a pre-operating system software program (in Frank, Jr. et al., a small BIOS program stored in a ROM 238. The BIOS program reads a default area of the disk which stores a boot program, known as a boot record, and stores the program in the memory array. The microprocessor (330, 430) then executes the boot program to load an operating system; an operating system present software program (in Frank, Jr. et al., a disk control program, for example); a protected storage medium configured to enable the pre-operating system software program to pass information to the operating system present software program (in Frank, Jr. et al., microprocessor 310, for example, executes a disk control program to initialize the disk drive). A portion of the storage capacity on disks 303 is partitioned to provide a protected area of disk's addresses. See also at least claim 1. With regard to claim 2, Frank, Jr. et al. further disclose a first interface (324, for example) to provide the pre-operating system software program access to the protected storage medium; and a second interface (320, for example) to provide the operating system present software program access to the protected storage medium. Further, in Frank, Jr. et al., any pre-OS application program executed during initial boot process before the OS is loaded including those associated with various peripheral attached to the host computer is readable as the so-called "second pre-operating software program." With regard to claims 5, 7, a secure boot of a host computer system is provided from a protected area

of a disk. With regard to claim 8, in Frank, Jr. et al., any application that runs while the OS is present is readable as the so-called "second operating system present software program." With regard to claims 9 and 10, the protected area is sufficient to store an image source 304 suitable to recreate a fully functional operating image in memory 340. When computer system 300 is initialized, such as following a power-up sequence, host interface controller 320 asserts a state-control signal 337 which is translated in host interface 334. With regard to method claims 11, 12, 15, 16, 18-21, 24-30, see explanation above regarding the apparatus claims.

The difference between Frank and the claimed subject matter is the use of a host processor to execute both the pre OS and OS present program. Note that in Frank, the disk microprocessor executes the pre OS and the host processor executes the OS present program separately.

Bealkowski et al. disclose the use of a disk loaded BIOS accessible from a host processor to execute both pre OS and OS present program for providing an inexpensive implementation of security to a personal computer.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to store the pre OS in the BIOS which is accessible by the host processor, as taught by Bealkowski et al., for the purpose of providing Frank with a disk loaded BIOS which is inexpensive to implement (see at least col. 3, lines 13-17). It is also clear that it is an obvious way for reducing cost, since only one processor is needed.

Claims 7, 12, 15, 24, 27-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frank in view of Bealkowski et al., as applied to claims 1-3, 5, 7, 9-11, 18-21, 25, and 26 above, and further in view of the following.

Frank et al., as explained above, discloses the claimed invention including the use of a secure boot program (also known as boot record). However, Frank et al. does not include the use of user authentication information such as password, which can be stored by the BIOS in a protected area of a memory disk, in the boot program during the booting process. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide authentication (password) during a secure boot in Frank et al.; and further store optionally such password in a protected area of a memory disk of Frank et al., since the use of such authentication during booting and storing such authentication afterwards in a protected area of a memory disk (so that security can be enhanced and in addition, in next boot or log-in, a user does not have to retype his/her password again) clearly involves only routine skill in the art. If Applicants choose to challenge the fact that authentication used during booting and optionally stored afterwards is old and well-known, supportive document(s) will be provided upon request.

Claims 16 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frank in view of Bealkowski et al., as applied to claims 1-3, 5, 7, 9-11, 18-21, 25, and 26 above, and further in view of Albrecht et al.

The further difference between Frank and the claimed subject matter is the use of encryption and digital signature for the boot-up information. Albrecht et al. discloses the use of data encryption and digital signature for providing additional secure authentication during boot-up. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide Frank with data encryption and digital signature, as taught by Albrecht et al., for providing additional secure authentication during boot-up.

Response to Arguments

Applicants' arguments filed 12/08/2003 have been fully considered but they are moot in view of the new ground of rejections.

US Patent No. 6,327,660 to Patel is cited as relevant art.

Any inquiry concerning this communication should be directed to Khanh Dang at telephone number 703-308-0211.

Khanh Dang
Primary Examiner